

*Stephanie - New terms  
for Tin/Lead*

DATE: June 11, 2001

FROM: Joseph E. Schiller

ATTENTION: Laura Shears

COMPANY: Federal-Mogul Corporation  
512 Grove St.  
Greenville, MI, 48838

US EPA RECORDS CENTER REGION 5



412067

NUMBER OF PAGES INCLUDING THIS PAGE: 2

RECYCLABLE MATERIAL: Mixed Nickel Wastes, and Tin/Lead Plating Bath Solids

Dear Ms. Shears:

Agmet is pleased to offer you the following proposal to recycle the three materials described below in detail.

Quantity: As shipments become available.

Delivery: F. O. B. Agmet's Oakwood, Ohio facility at 7800 Medusa St. Items will be in covered steel drums banded on pallets.

Charges and Payments:

MIXED NICKEL WASTES:

Analysis: Typically material is 15-25% Ni after calcining with an LOI of 40-80%

Charges: If the "as received" nickel content is over 10%, there is no recycling charge. If the "as received" nickel content is below 10%, Federal-Mogul will pay \$50 per drum processing fee to recycle the mixed nickel waste. There is an additional charge of \$2 per drum for each percent that the Nickel content of the calcined product falls below 10%.

TIN/LEAD PLATING BATH SOLIDS

Analysis: Typically material is 10-15% Sn and 2-5% F on an "as received" basis.

Charges: The charge will be \$690 per ton, and payment for Sn will be as follows: Deduct 1% of Sn for each % F, and pay 75% of the LME Sn price, averaged for the week of delivery.

Example: The sample provided by Federal Mogul assayed "as received" 13.6% Sn and 3.5% F. (The moisture content was 62%). Using the terms stated above with the LME Sn price of \$2.40/lb., the Sn credit would be:

$$\text{Credit} = [(13.6 - 3.5)/100] \times 2000 \times \$2.40 \times .75 = \$363.60$$

The net charge to Federal Mogul would be \$690 - \$363.60 = \$326.40

Settlement: 30 days from invoice.

Other Terms: Weighing, sampling, and assaying will be in accordance with Agmet's standard industry practice.

Please contact me with any questions.

Sincerely,

Joseph E. Schiller

Acceptance by Federal-Mogul

\_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

**AGMET METALS, INC.***Remit to:*

PO BOX 631362

Cincinnati, OH 45263-1362

Phone (440) 439-7400 Fax (440) 439-7446

✓

Chemetco

Code: Chemetco

Our Invoice No.	Your Reference No.	Pick-Up Date	Billing Date	Ship VIA	Acct. Rep.
12512		1-Aug-01	31-Aug-01	Birmingham	D.Cassidy

**Invoice**

Plating Solids	Tin/Lead		<u>Price/LB</u>	<u>Value</u>
8-2681-01				
Gross	37,660 Drums	56		
Tare	(3,215) Pallets	15	0.0001	3.44
Net	34,445			

NO INVOICE NECESSARY, THEY JUST SEND IN CHECK  
PER D.C.

**Grand Total \$ 3.44**

**AGMET METALS, INC.***Remit to:*

P.O. Box 631362

Cincinnati, OH 45263-1362

(440) 439-7400 • FAX (440) 439-7446

PAGE 1

CHEMETCO  
3576 CHEMETCO LANE, ROUTE 3  
HARTFORD IL 62048

TERMS: NET  
ORDER NUMBER: 12512

ATTN: DENNIS MEYER

OUR INVOICE NO.	YOUR REFERENCE NO.	PICK-UP DATE	BILLING DATE	SHIP VIA
12512		08/01/01	08/31/01	BIRMINGHAM

INVOICE		PRICE	EXTENSION
1.00 lbs. =	1.00 EA @	3.44/EA	3.
		SUBTOTAL	3.
		TOTAL	3.

AGMET METALS, INC.

Dana J. Cassidy



# Agmet Metals Inc.

7800 MEDUSA STREET • OAKWOOD VILLAGE, OH 44146  
TELEPHONE: (440) 439-7400 • FAX: (440) 439-7446

## Internal *corporate-* MEMO

April 14, 1998

TO: Linda Rupert / Joe Shiller  
FROM: Fred Warren  
SUBJECT: Federal Mogul by-product shipping information

Dear Colleagues;

I've exhausted my personal knowledge and had to resort to calling the DOT Information Hot-Line in Washington DC.

The consensus was to use the following as a proper shipping name:

**CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (STANNOUS FLUOBORATE)**

**CLASS 8**

**UN 3264**

**PG II**

**TIN / LEAD PLATING BATH SOLIDS ON FILTER PAPER WITH FREE LIQUID  
FOR METAL RECYCLING**

**1996 NORTH AMERICAN EMERGENCY GUIDE NUMBER # 154**

**MSDS # (s)**

**DRUM LABEL REQUIREMENT: CORROSIVE CLASS 8 UN3264  
CONTAINS TIN / LEAD SOLIDS**

**PLACARD REQUIREMENTS: CORROSIVE 8 (PANEL No.) 3264**

Thank you,

Fred

Shipper's No. 8-2681

Carrier's No. \_\_\_\_\_

Date 10/03/2021

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of the shipment, and the same and conditions are hereby agreed to by the shipper and accepted for himself and his agents.

Route \_\_\_\_\_ (★ To be filled in only when shipper desires and governing tariffs provide for delivery there)

ITEM #58143

TRACTOR NO. 1397DATE 8-1-01TRAILER NO. 531441FLAT ☐VAN ☒BULK ☐IN ☐OUT ☒CARRIER Birmingham NashvilleMSDS 27ACCOUNT CHEMETCO - INC.INITIALS CKLOT # 8-2681MATERIAL TIN/LEAD PLATING BATH SOLIDS  
ON FILTER PAPER • I.D.COUNT 56 DR / 15 PALLETS • GROSS

COMMENTS: \_\_\_\_\_ • TARE

NO INV. RECD. • NETThey pay us. \* DANA\* Chemetco

1397 10. 10. 12:34 PM AUG 01 2001

34140 16 75

1397 10. 10. 12:42 PM AUG 01 2001

71800 16 DR

34140 16 TR RECALLED

37860 16 HT

AUG 1 2001  
AUG 1 2001

8-2681

NO 19377

## Material Safety Data Sheet

MSDS Number: WS-850

Page 1 of 4

KESTER SOLDER

Date Prepared: 18 May 1993

515 E. TOUHY AVENUE  
DES PLAINES, IL 60018

Supersedes: 27 May 1992

Prepared By: D. Bernier

Telephone Number For Information: (708) 287-1600

CHEMTREC 24 Hour Emergency Telephone Number: (800) 424-9300

## SECTION 1 - PRODUCT IDENTIFICATION AND USE

WS-850 SOLDERPASTE

Product Name And Number As Used On Label

PRODUCT USE: Mixture of 90% solder powder with soldering flux for electrical or electronic applications.

NFPA Rating:

Health:

2

Flammability:

1

Reactivity:

0

Special:

HMIS Rating:

Health:

2

Flammability:

1

Reactivity:

0

Personal Protection:

X

DOT: Not Regulated.

WHMIS: Class D, Division 2, Subdivision B

TDG: Packaging Group III, Class 9.2

NA = Not Applicable

NE = Not Established

UN = Unknown

## SECTION 2 - INGREDIENTS AND HAZARDS

HAZARDOUS INGREDIENTS 1% or greater CARCINOGENS 0.1% or greater	C.A.S. Number	WT. %	OSHA PEL mg/m <sup>3</sup>	ACGIH TLV TWA mg/m <sup>3</sup>
Lead	7439-92-1 *	33.3	0.05	0.15
Tin	7440-31-5	36.7	2.0	2.0
Modified Rosin	61791-17-1	3	NE	NE
Hexylene Glycol	107-41-5	<1	NE	C125
NON-HAZARDOUS INGREDIENTS				
Nonionic Surfactants	68439-49-6	<1	NE	NE
Ethoxylated Amides	68155-24-8	4	NE	NE

NOTES: \* This Chemical is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Profile # 3101 Com-Kyl Inc.

no appendix VII compounds



KESTER SOLDER

MSDS Number: WS-350

Date Prepared: 18 May 1991

SECTION 3 - PHYSICAL DATA

Boiling Point (760 mm Hg): NA °F NA °C

Specific Gravity (water = 1 at 25 °C): >1

Vapor Pressure (mm Hg at 20 °C): NA

Melting Point: NA °F NA °C

Vapor Density (air = 1): NA

Evaporation Rate (butyl acetate = 1): <0.1

Solubility in Water (% by weight): ~10

% Volatile (by volume): 0

pH: NA

Volatile Organic Compound (VOC): 0 g/liter

Odor Threshold: NE

Appearance and Odor: Gray metallic paste with mild odor.

SECTION 4- FIRE AND EXPLOSION HAZARD DATA

Flash Point (T.O.C.): >200 °F >93.3 °C Auto-Ignition Temperature: >440 °F >226 °C

Flammability Limits % by volume in air LEL: NE UEL: NE

Extinguishing Media: ( ) WATER (X) CARBON DIOXIDE ( ) ALCOHOL FOAM (X) DRY CHEMICAL

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lead oxide fumes.

Explosion Sensitivity Impact - None Identified Static discharge - ( ) Yes (X) No

Special Firefighting Procedures: Wear self-contained breathing apparatus if this material is in the vicinity of a fire.

Unusual Fire and Explosion Hazards: None.

SECTION 5 - REACTIVITY HAZARD DATA

STABILITY (X) Stable ( ) Unstable Conditions to Avoid: None

Incompatibility (materials to avoid): Strong acids, strong oxidizers.

Hazardous Decomposition Products: When heated to soldering temperatures, the solvents are evaporated and thermal degradation products may include aliphatic aldehydes and acids. No lead is detected in fumes from soldering below 1000 °F (537 °C).

HAZARDOUS POLYMERIZATION:

( ) May Occur Conditions To Avoid: NE

(X) Will Not Occur

## KESTER SOLDER

MSDS Number: WS-850

Page 3 of 4

Date Prepared: 18 May 1993

**SECTION 6 - HEALTH HAZARD DATA****EXPOSURE LIMITS:** Ingested LD(50): NE g/Kg Inhaled LC(50): NE g/Kg

Primary exposure during soldering is to evaporated solvent which may contain droplets of rosin and/ or other organic decomposition products.

**PRIMARY ROUTES OF ENTRY:** ( ) Skin ( X ) Eyes ( X ) Inhalation ( X ) Ingestion

**TARGET ORGANS:** Flux fumes: eyes, mucous membranes and respiratory system. Ingestion of lead metal can affect kidneys, gastrointestinal, reproductive and neurological systems.

**EFFECTS OF ACUTE (severe short-term) EXPOSURE:**

**INHALATION:** Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

**SKIN CONTACT:** Possible local irritation.

**SKIN ABSORPTION:** None

**EYE CONTACT:** Irritation from contact with smoke from soldering.

**INGESTION:** Most of the solderpaste will pass through the body unabsorbed. Lead that is absorbed is caught by the liver and, in part, excreted in the bile.

**EFFECTS OF CHRONIC (prolonged) EXPOSURE:** Prolonged or repeated contact with skin can cause a rash. Breathing fumes during soldering may cause respiratory irritation, headache and irritation of mucous membranes. Repeated ingestion of lead can result in systemic poisoning.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing conditions of the lungs, diseases of the blood and blood-forming organs, kidneys, nerves and possibly reproductive system.

**CARCINOGEN** ( ) NTP ( ) OSHA ( 9 ) IARC ( ) Not Listed

**EMERGENCY FIRST AID PROCEDURES:** Seek medical assistance for further treatment, observation and support if needed

**EYE CONTACT:** Flush eyes with plenty of water and get medical attention.

**SKIN CONTACT:** Wash thoroughly with soap and water.

**INHALATION:** Remove victim to fresh air.

**INGESTION:** Gastric lavage ( stomach pumping ) if physician advises. Get prompt medical attention.

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## SECTION 7. PROCEDURES FOR MATERIAL CONTROL

Steps to be Taken If Material Is Spilled Or Released:	Scoop up paste and deposit in appropriate containers.
Clean up residual with isopropanol or detergent water.	

**Waste Disposal Methods:** Solderpaste can be melted to reclaim the solder metal. Containers and extracted flux are hazardous waste.

**CAUTION:** Empty containers may contain product residue. Observe all label precautions.

**Precautions to be Taken in Handling and Storage:** Store at or near 70°F (21°C) in closed containers. Wash hands after handling solderpaste and before eating or smoking. Care should be taken to remove solderpaste from under fingernails.

## SECTION 8 - PROTECTIVE MEASURES

**Respiratory Protection:** Usually not required. When ventilation is not adequate to remove smoke from the breathing zone, a canister type respirator should be worn.

**Protective Gloves:** Plastic or rubber gloves where necessary to avoid skin contact.

**Eye Protection:** Safety glasses especially during soldering

**VENTILATION TO BE USED:** Provide adequate exhaust ventilation (general and / or local) to meet TLV requirements

**Other Protective Clothing and Equipment:** Do not wear contaminated clothing or shoes home.

**Hygienic Work Practices:** Wash hands thoroughly after handling solderpaste.

## SECTION 9 - ADDITIONAL INFORMATION

If the solder contains lead, these precautions are applicable.

**This product contains lead which is known to the State of California to cause cancer, birth defects or other reproductive harm.**

Lead and its compounds have been placed in Class B2, probably carcinogenic to humans by USEPA.

IARC has placed lead and its compounds in Class 2B, possibly carcinogenic to humans.

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester Solder extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by or under the direction of technically qualified personnel. Hazardous Materials Information System (WHMIS), require user employees must be instructed to use the Material Safety Data Sheet as a source for hazard information.


 PRODUCT SAFETY  
DATA SHEET

## LEAD FLUOBORATE SOLUTION

78117698

Dept 5

## A. GENERAL INFORMATION

TRADE NAME (COMMON NAME) <b>LEAD FLUOBORATE SOLUTION</b>		<input checked="" type="checkbox"/> CAS NO	<input type="checkbox"/> GENERAL PRODUCT CODE *
		13814-96-5	
CHEMICAL NAME AND/OR SYNONYM Lead Fluoborate in water [Assay: 50-52% Pb(BF <sub>4</sub> ) <sub>2</sub> ]			
Synonym: Lead fluoroborate; Lead boron fluoride; Borate (1-), Tetrafluoro-, Lead (2+).			
FORMULA <b>Pb(BF<sub>4</sub>)<sub>2</sub> + H<sub>2</sub>O</b>		MOLECULAR WEIGHT <b>380.81/18.02</b>	
ADDRESS (NO., STREET, CITY, STATE AND ZIP CODE) <b>GENERAL CHEMICAL CORPORATION CN 1829 Morristown, N.J. 07960-1829</b>			
CONTACT <b>Director Environmental Matters</b>	PHONE NUMBER <b>(201) 455-5630</b>	LAST ISSUE DATE	CURRENT ISSUE DATE <b>Sept. 1986</b>

## B. FIRST AID MEASURES

<p><b>Eyes:</b> Flush eyes immediately for 15-20 minutes with large amounts of water, holding eyelids open to allow thorough flushing (use water only). Seek medical evaluation of potential eye burns.</p> <p><b>Skin:</b> Promptly wash with plenty of soap and water, then flush with water until all chemical is removed. Treat as an acid burn, if severe, and seek medical aid. Promptly remove contaminated clothing and wash before reuse.</p> <p><b>Inhalation:</b> Remove to fresh air. If breathing is difficult, give oxygen, if a qualified operator is available. If not breathing, give artificial respiration, preferably mouth-to-mouth. If symptoms persist, get medical help.</p> <p><b>Ingestion:</b> Call a physician at once. Do not induce vomiting. If conscious, give several glasses of milk or several ounces of milk of magnesia, if available; otherwise, give large quantities of water and keep patient warm and quiet.</p>	EMERGENCY PHONE NUMBER <b>(201) 455-3700</b>
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 C. HAZARDS INFORMATION  
HEALTH

<b>INHALATION</b> Mist inhalation can cause headache, cramps, pain in legs, coma. Chronic exposure may damage the central and peripheral nervous system.	
<b>INGESTION</b> Symptoms include: Metallic taste, abdominal pain, vomiting, diarrhea, collapse, convulsions and coma. Fatal dose (human) is estimated to be 0.5 gram of absorbed lead. Hypocalcemia, possibly severe or fatal, may occur due to the fluoride content, which can precipitate calcium stored in the body.	
<b>SKIN</b> Liquid contact causes irritation. Prolonged contact will intensify this condition and may cause burns.	
<b>EYES</b> Liquid contact causes irritation, possibly severe, and burns may result. Mists will also irritate.	
PERMISSIBLE CONCENTRATION: AIR (SEE SECTION J) <b>ACGIH/TLV: 0.15 mg/cu.m. (dusts/fumes, as Pb)</b>	BIOLOGICAL Action Level: <b>See Section K</b>
<b>UNUSUAL CHRONIC TOXICITY</b> Extended inhalation of mist may cause some of the chronic symptoms noted from experience with lead fumes and dust. Among these are metallic taste, loss of appetite, indigestion, nausea, vomiting, constipation, abdominal cramps, nervousness, and insomnia. See, also, Section K.	

# **FIRE AND EXPLOSION**

FLASH POINT Not flammable	N.A. °C	AUTO IGNITION TEMPERATURE Not applicable	OC	FLAMMABLE LIMITS IN AIR (% BY VOL) LOWER - Not applicable UPPER - Not applicable
<input type="checkbox"/> OPEN CUP <input type="checkbox"/> CLOSED CUP				
UNUSUAL FIRE AND EXPLOSION HAZARDS At or above the boiling point ( $>100^{\circ}\text{C}$ ), the solution gives off toxic mist.				

## **FIRE EXTINGUISHING AGENTS RECOMMENDED**

Use foam, carbon dioxide or dry chemical. Product itself is nonflammable.

## **FIRE EXTINGUISHING AGENTS TO AVOID**

Do not use water stream directly on material itself. Use water spray to absorb or disperse vapors.

## **SPECIAL FIRE FIGHTING PRECAUTIONS**

Avoid breathing vapors and fumes from burning material. Avoid bodily contact with the material. Wear self-contained breathing apparatus, approved by NIOSH. If contact with the material is anticipated, wear full protective clothing. Use water spray to keep fire-exposed containers cool.

## **VENTILATION**

If misty conditions prevail, provide local exhaust ventilation, or a ventilated closed system (e.g., hood). Natural ventilation is normally adequate in the absence of misty conditions.

## **NORMAL HANDLING**

Do not get in eyes, on skin or clothing. Avoid breathing mist, if formed. Observe scrupulous personal hygiene and good housekeeping practices. Wash thoroughly after handling. Use with adequate ventilation and do not eat or smoke while handling.

## **STORAGE**

Store in a dry, well-ventilated area, out of the sun, away from heat and food products. Keep containers tightly closed and protect from physical damage. Periodically inspect drums and storage conditions.

## **SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT - SECTION 8)**

Contain spill with readily available material (earth, sand, etc.). Using caution, flush with water to dilute spill or neutralize it with alkali such as sodium carbonate. Keep out of sewer. Mop or pump up into suitable container, cover and label for storage and later disposal (see Waste Disposal, Section 1).

## **SPECIAL PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS**

## **SIGNAL WORD - DANGER!**

This solution is corrosive to aluminum. Do not reuse container when empty. Persons exposed to mist inhalation or other contact should have medical surveillance. Regular safety training is recommended.

## **RESPIRATORY PROTECTION**

If misty conditions prevail and concentration is greater than TLV but under  $0.5 \text{ mg(Pb)}/\text{m}^3$ , wear a NIOSH-approved, high-efficiency particulate respirator. This may be used up to  $2.5 \text{ mg(Pb)}/\text{m}^3$ , if a full facepiece is added. For very high concentrations ( $> 50 \text{ mg(Pb)}/\text{m}^3$ ), use a self-contained or supplied-air breathing system with full facepiece operated in pressure-demand mode, approved by NIOSH.

## **EYES AND FACE**

Under normal working conditions, wear chemical safety goggles; add a full-face plastic shield if solution may be splashed or sprayed, and there is any possibility of liquid contacting the eyes. Do not wear contact lenses.

## **HANDS, ARMS, AND BODY**

Wear protective rubber gloves and protective clothing, if there is repeated or prolonged contact with liquid. Remove promptly any contaminated items of clothing and wash before reuse. Do not take home work clothes or shoes. Shower after work and change any clothing that may have been contaminated.

## **OTHER CLOTHING AND EQUIPMENT**

Neutralizing supplies and equipment, if called for by pre-planned spill or leak procedures. Provide eyewash stations and quick drench shower facilities near work areas.

**F. PHYSICAL DATA**

<b>MATERIAL IS (AT NORMAL CONDITIONS):</b> <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SOLID <input type="checkbox"/> GAS <input type="checkbox"/> _____		<b>APPEARANCE AND ODOR</b> Colorless liquid with relatively no odor.	
<b>BOILING POINT</b> > 100°C <b>MELTING POINT</b> < 0°C	<b>SPECIFIC GRAVITY</b> (H <sub>2</sub> O = 1) (liquid) 1.75 (approx.)	<b>VAPOR DENSITY</b> (AIR = 1) Not applicable (water vapor only)	
<b>SOLUBILITY IN WATER</b> (% by Weight) Complete	<b>pH</b> Unknown, but estimated to be acidic	<b>VAPOR PRESSURE</b> (mm Hg at 20°C) <input type="checkbox"/> (PSIG) <input type="checkbox"/> Not applicable	
<b>EVAPORATION RATE</b> (Butyl Acetate = 1) <input type="checkbox"/> (Ether = 1) <input type="checkbox"/> Not applicable	<b>% VOLATILES BY VOLUME</b> (At 20°C) Not applicable		

**G. REACTIVITY DATA**

<b>STABILITY</b> <input type="checkbox"/> UNSTABLE <input checked="" type="checkbox"/> STABLE	<b>CONDITIONS TO AVOID</b> Evaporation to dryness with sustained heating (as in an accidental fire).
<b>INCOMPATIBILITY (MATERIALS TO AVOID)</b> Cyanides; calcium carbide; fluorine; water-reactive materials.	
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Heating solution to or above boiling point gives off toxic mist. Heating of residue, if evaporated to dryness, may yield toxic gases.	
<b>HAZARDOUS POLYMERIZATION</b> <input type="checkbox"/> MAY OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR	<b>CONDITIONS TO AVOID</b> None known.

**H. HAZARDOUS INGREDIENTS (Mixtures Only)**

MATERIAL OR COMPONENT/C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
Not applicable		

**I. ENVIRONMENTAL**

DEGRADABILITY/AQUATIC TOXICITY		OCTANOL/WATER PARTITION COEFFICIENT	
Degradability: N.A. (Inorganic)		Unknown	
Aquatic toxicity: No data found.			
EPA HAZARDOUS SUBSTANCE? (CLEAN WATER ACT SECT. 311)		IF SO, REPORTABLE QUANTITY	40 CFR 116-117
YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		5000 (dry basis) 9800 (as is basis)	
WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)			
Waste may be neutralized with caution, using any of the following agents: $\text{CaO}$ ; $\text{Ca}(\text{OH})_2$ ; $\text{NaOH}$ ; $\text{Na}_2\text{CO}_3$ . Do not sewer. Disposal of waste lead fluoroborate solution may be subject to federal, state and local regulations. Users should review their operations in terms of applicable federal, state and local laws and regulations; then consult with appropriate regulatory agencies before discharging or disposing of waste material.			
RCRA STATUS OF UNUSED MATERIAL IF DISCARDED		HAZARDOUS WASTE NUMBER: (IF APPLICABLE)	40 CFR 261
Hazardous waste (lead, EP toxicity) if discarded at concentration as strong as 5 mg(Pb)/liter.		D008	

**J. REFERENCES**

PERMISSIBLE CONCENTRATION REFERENCES			
TWA: OSHA Standard, 29 CFR 1910 (1982), "Z List".			
TLV: ACGIH 1984-85 List: "Threshold Limit Values for Chemical Substances..."			
NIOSH Registry (RTECS), 1981-82, Accession No. ED 2700000			
Biological Action Levels: See Section K below.			
REGULATORY STANDARDS	D.O.T. CLASSIFICATION	I.D. No.	49 CFR 173
	ORM-8	NA 2281	
D.O.T. Hazardous Materials Table: 49 CFR 172.101.			
GENERAL			
(a) Dreisbach, R.H., "Handbook of Poisoning", 10th ed., 1980, Lange Medical Publications, Los Altos, CA.			
(b) NIOSH Criteria Document: "Occupational Exposure to Inorganic Lead", 1977, No. 78-158.			
(c) NIOSH Criteria Document: "Occupational Exposure to Inorganic Fluorides", 1975, PB 246-692, NTIS.			
(d) Patty's Industrial Hygiene and Toxicology, 3rd ed., 1981-82, Vol. 2A, pp. 1687-1725.			
(e) NIOSH/OSHA: "Pocket Guide to Chemical Hazards", 1978 (8/80 printing).			
(f) NFPA Manual 491 M, "Hazardous Chemical Reactions", 1975, 8th ed., 1984.			
(g) Assoc. of American Railroads: "Emergency Handling of Hazardous Materials in Surface Transportation," 1981.			

**K. ADDITIONAL INFORMATION**

SECTION C - HAZARDS INFORMATION (Health)
Permissible Concentration: Air - continued
TWA/TLV for "Fluorides, as F": OSHA/TWA: 2.5 mg/m <sup>3</sup> (as F). ACGIH/TLV: the same.
Biological Action Levels:
Fluorides: 7 mg/L urinary fluoride at end of 8-hr. workshift, corrected to sp. gr. of 1.024. (Ref.: Allied Corp., Chemical Sector; value in use at Metropolis, IL, plant.)
Lead (Inorganic Compounds): OSHA Lead Standard mandates medical removal at 60 micrograms/ 100 mL blood lead. See OSHA Lead Standard for further details.
Unusual Chronic Toxicity - continued
Excess lead absorption may damage the central and peripheral nervous system and the kidneys. Chronic exposure to fluorides may damage the kidney and cause fluorosis. Excess exposure to lead can impair the formation of blood cells; in addition, the fetus of pregnant women workers may be at increased risk, because lead is able to traverse the placenta barrier and enter the blood stream of the fetus.
IARC Carcinogenicity Assessment (Lead and Lead Cpds.): "Inadequate" (humans); "Sufficient" (animals - for some salts); "Inadequate" (short-term tests). Ref. IARC Monographs, Suppl. 4, 1982.

PSDS FILE # GC 3045

THIS PRODUCT SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION AND INTERPRETATION.

GENERAL CHEMICAL CORPORATION PROVIDES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN.

N O T I C E

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

<u>CAS #</u>	<u>Chemical Name</u>	<u>% by weight</u>
-	Lead Compounds	51

This information must be included in all MSDSs that are copied and distributed for this product.




**PRODUCT SAFETY  
DATA SHEET**
**STANNOUS FLUOBORATE SOLUTION**
**A GENERAL INFORMATION**
*TIN FLUOBORATE*
*DEPT 05*

TRADE NAME (COMMON NAME) <b>STANNOUS FLUOBORATE SOLUTION</b>		GENERAL PRODUCT CODE 13314-97-6	
CHEMICAL NAME AND/OR SYNONYM Stannous Fluoborate, aqueous solution      Synonym: Tin Fluoborate Solution [Assay: 50-52% Sn(BF <sub>4</sub> ) <sub>2</sub> ]			
FORMULA Sn(BF <sub>4</sub> ) <sub>2</sub> in water		MOLECULAR WEIGHT 292.2	
ADDRESS (No., STREET, CITY, STATE AND ZIP CODE) <b>GENERAL CHEMICAL CORPORATION CN 1829 Morristown, N.J. 07960-1829</b>			
CONTACT Director Environmental Matters	PHONE NUMBER (201) 455-5630	LAST ISSUE DATE	CURRENT ISSUE DATE Sept. 1986

**B FIRST AID MEASURES**

<p><b>Eyes:</b> Flush eyes immediately for 15-20 minutes with large amounts of water, holding eyelids open to allow thorough flushing (use water only). Seek medical evaluation of potential corneal damage.</p> <p><b>Skin:</b> Promptly wash with plenty of soap and water, then flush with water until all chemical is removed. Get medical attention for any irritation. Remove any contaminated clothing and wash before reuse.</p> <p><b>Inhalation:</b> Remove to fresh air. If breathing is difficult, give oxygen if a qualified operator is available. If not breathing, give artificial respiration, preferably mouth-to-mouth. If symptoms persist, get medical help.</p> <p><b>Ingestion:</b> Do not induce vomiting. If conscious, give several glasses of milk or other calcium-containing liquids, or several ounces of milk of magnesia, if available; otherwise, give large quantities of water and arrange for immediate medical help.</p>	<p>EMERGENCY PHONE NUMBER (201) 455-3700</p>
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**C. HAZARDS INFORMATION**
**HEALTH**

<b>INHALATION</b> Inhalation of mist may irritate mucous membranes, nose, throat and lungs.		
<b>INGESTION</b> May cause severe damage to mouth, esophagus, stomach. May be fatal. May cause kidney damage and hypocalcemia, possibly severe, due to the fluoride content, which precipitates calcium stored in the body. Estimated fatal dose for solute is 5 grams.		
<b>SKIN</b> May cause irritation and/or burns (especially with prolonged contact).		
<b>EYES</b> May cause severe irritation and/or corneal damage (burns).		
PERMISSIBLE CONCENTRATION - AIR (SEE SECTION J) ACGIH/TLVs: the same	OSHA/TWA: 2.5 mg/m <sup>3</sup> (Fluoride, as F) 2 mg/m <sup>3</sup> (Inorg. Comp. as Sn)	BIOLOGICAL Action Level: 7 mg/L urinary fluoride at end of 8-hr. workshift, corrected to sp. gr. of 1.024.
<b>UNUSUAL CHRONIC TOXICITY</b> See Section K.		

**C. HAZARDS (Cont.)****FIRE AND EXPLOSION**

FLASH POINT Not flammable	N.A. OC	AUTO IGNITION TEMPERATURE Not applicable	OC	FLAMMABLE LIMITS IN AIR (% BY VOL.) LOWER – Not applicable      UPPER – Not applicable
<input checked="" type="checkbox"/> OPEN CUP <input type="checkbox"/> CLOSED CUP				
UNUSUAL FIRE AND EXPLOSION HAZARDS High temperatures yield mists containing toxic stannous fluoborate, a corrosive agent on skin and some metals.				

**D. PRECAUTIONS/PROCEDURES**

FIRE EXTINGUISHING AGENTS RECOMMENDED Although not flammable itself, if involved in a fire use dry chemical, carbon dioxide or foam.
FIRE EXTINGUISHING AGENTS TO AVOID Do not use water stream directly on material itself. Use water spray to absorb or disperse vapors.
SPECIAL FIRE FIGHTING PRECAUTIONS Avoid breathing vapors and avoid bodily contact with the material. Firefighters should wear self-contained, NIOSH-approved breathing apparatus. If contact with the material is anticipated, wear full protective clothing. Use water spray to keep fire-exposed containers cool.
VENTILATION If misty conditions prevail, use local exhaust or a special fully enclosed system (e.g., hood) as an alternative. Natural ventilation is normally adequate in the absence of misty conditions.
NORMAL HANDLING Do not get in eyes, on skin or clothing. Avoid breathing mist, if formed. Observe good personal hygiene and good housekeeping practices. Wash thoroughly after handling; do not smoke or eat while handling. Use with adequate ventilation.
ORAGE Store at moderate temperatures out of the sun in a dry, well-ventilated area, away from foodstuffs. Keep containers upright, tightly closed and protect from physical damage.
SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT – SECTION E) Contain spill with readily available material (earth, sand, etc.) and recover, if possible. Otherwise, neutralize with sodium carbonate or other alkali and, using caution, flush with water, if permitted by applicable disposal regulations. Attempt to keep out of sewer. Mop or pump into suitable container, cover and label for storage or later disposal. Provide personal protection for personnel involved with clean-up operation.
SPECIAL: PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS Stannous fluoborate solution should not be handled in glass equipment. Drum closures should be removed carefully to relieve possible internal pressure. Do not pressurize drums and do not reuse drums when empty.
SIGNAL WORD – DANGER!

**E. PERSONAL PROTECTIVE EQUIPMENT**

RESPIRATORY PROTECTION For low levels ( $< 10 \times$ TLV) of mist, use NIOSH-approved dust or mist respirator. For intermediate levels of exposure ( $> 10 \times$ but $< 100 \times$ TLV), use NIOSH-approved, full-face, air cleaning respirators for both lung and eye protection. For high levels, use NIOSH-approved, self-contained or supplied-air breathing systems.
EYES AND FACE Under normal working conditions, wear chemical goggles; add a full-face plastic shield if solution may be splashed or sprayed and there is any possibility of liquid contacting the eyes. Do not wear contact lenses.
HANDS, ARMS, AND BODY Wear impervious apron and gloves for routine product use. For increased protection, if repeated or prolonged contact with liquid is anticipated, wear impervious jacket and trousers. Remove promptly and wash any items upon contamination.
OTHER CLOTHING AND EQUIPMENT Provide eyewash stations and quick-drench shower facilities near all solution handling equipment.

**F PHYSICAL DATA**

MATERIAL IS (AT NORMAL CONDITIONS) <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SOLID <input type="checkbox"/> GAS <input type="checkbox"/> _____		APPEARANCE AND ODOR Clear, colorless solution; essentially odorless.	
BOILING POINT Unknown °C	SPECIFIC GRAVITY (H <sub>2</sub> O = 1) 1.55 (approx)	VAPOR DENSITY (AIR = 1) Not applicable	
MELTING POINT °C			
SOLUBILITY IN WATER (% by Weight) Complete	pH approximately 2	VAPOR PRESSURE (mm Hg at 20°C) <input type="checkbox"/> PSI(G) <input type="checkbox"/> Not applicable (water vapor only)	
EVAPORATION RATE (Butyl Acetate = 1) <input type="checkbox"/> (Ether = 1) <input type="checkbox"/> Not applicable	% VOLATILES BY VOLUME (at 20°C) Not applicable (water vapor only)		

**G REACTIVITY DATA**

STABILITY <input type="checkbox"/> UNSTABLE <input checked="" type="checkbox"/> STABLE	CONDITIONS TO AVOID High temperatures (solution emits hazardous mist).
INCOMPATIBILITY (MATERIALS TO AVOID) Stannous fluoroborate solution is acidic and will react with acid-incompatible materials; e.g., cyanides, sulfides. It may react vigorously with strong oxidizing agents.	
HAZARDOUS DECOMPOSITION PRODUCTS Stannous fluoride, boron trifluoride gas (speculative). Boiling yields a toxic mist containing stannous fluoroborate. In dilute solution, some hydrolysis to hydrofluoric acid may occur.	
HAZARDOUS POLYMERIZATION <input type="checkbox"/> MAY OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR	CONDITIONS TO AVOID None known.

**H. HAZARDOUS INGREDIENTS (Mixtures Only)**

MATERIAL OR COMPONENT / C.A.S. #	WT. %	HAZARD DATA (SEE SECT J)
Not applicable.		

**I. ENVIRONMENTAL**

DEGRADABILITY/AQUATIC TOXICITY		OCTANOL/WATER PARTITION COEFFICIENT	
Degradability: N.A. (inorganic)		Unknown	
Aquatic Toxicity: LC50 (rainbow trout): 80 mg/L/24 hrs; 78 mg/L/48 thru 98 hrs. EC50 (Daphnia magna): 87 mg/L/24 and 48 hrs.			
EPA HAZARDOUS SUBSTANCE (CERCLA WATER ACT SECT 311): <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		IF SO, REPORTABLE QUANTITY: _____ #	
40 CFR 115-117			
WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)			
Neutralize with caution, using any of the following agents: CaO; Ca (OH) <sub>2</sub> ; NaOH; KOH; Na <sub>2</sub> CO <sub>3</sub> . Do not sewer. Disposal of treated waste stannous fluoborate solution may be subject to federal, state and local regulations. Users should review their operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material. Waste may have to be disposed of by an approved, licensed contractor.			
RCRA STATUS OF UNUSED MATERIAL IF DISCARDED		HAZARDOUS WASTE NUMBER (IF APPLICABLE)	
EPA "hazardous waste" (corrosive), if discarded.		D002	
		40 CFR 261	

**J. REFERENCES**

PERMISSIBLE CONCENTRATION REFERENCES	
TWA: OSHA Standard, 29 CFR 1910 (1982), "Z List"	
TLV: ACGIH 1984-85 List; "Threshold Limit Values for Chemical Substances..."	
Biological Action Level: Allied/Signal Corporation; value in use at Metropolis, IL, plant.	
Aquatic Toxicity: Allied/Signal Corporation data, Report MA-29-78-1 (1983).	
REGULATORY STANDARDS	D.O.T. CLASSIFICATION: Corrosive material
	I.D. No.: UN 1760
D.O.T. Classification by Allied Corp., Chemical Sector; Skin Corrosivity Test; Report No. MA-29-78-5 (1983).	

**GENERAL**

- (a) NIOSH Criteria Document No. 76-103, "Occupational Exposure to Inorganic Fluoride", 1975, PB-246-692, NTIS.  
 (b) ACGIH: "Documentation of TLVs", 4th edition.  
 (c) Patty's "Industrial Hygiene and Toxicology", 3rd. ed., (1981-82), Vol. 2A.

**K. ADDITIONAL INFORMATION****SECTION C - HAZARDS INFORMATION**Unusual Chronic Toxicity

We have no data on Stannous Fluoborate Solution, per se. However, NIOSH has linked certain other fluoborate compounds with inorganic fluorides [reference (a), above]. Chronic exposure to fluorides is associated with osseous fluorosis (increased radiographic density of bones, the mottling of teeth, etc.). [This condition will not develop if permissible exposure levels are not exceeded.]

Kidney damage, asthma and symptoms resembling rheumatism may also occur.

PSDS FILE# GC 3021

THIS PRODUCT SAFETY DATA SHEET IS OFFERED SOLELY FOR YOUR INFORMATION, CONSIDERATION, AND  
 ACCEPTANCE.

WE MAKE NO GUARANTEE OR WARRANTY, EITHER EXPRESS OR IMPLIED, AND ASSUME NO  
 RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE DATA CONTAINED HEREIN.


**Agmet Metals Inc.**

7800 Medina Street • Oakwood Village, OH 44146

 Call Joseph Schiller at  
 (612)403-0349 if you need  
 assistance with this form.

**MATERIAL PROFILE**

 COMPANY NAME: Federal Mogul Corp EPA ID. # \_\_\_\_\_  
 STREET ADDRESS: 510 E. Grove St.  
 CITY-STATE-ZIP: Granville, OH 43838  
 CONTACT NAME: Laura Shears PHONE: 616-754-1219
**MATERIAL CHARACTERIZATION**

 NAME OF MATERIAL: Tin Lead Bath Solids  
 PHYSICAL STATE: \_\_\_\_\_ SCRAP METAL \_\_\_\_\_ ☒ WET SLUDGE \_\_\_\_\_ DRY SLUDGE \_\_\_\_\_ SLURRY  
 \_\_\_\_\_ LIQUID \_\_\_\_\_ % SOLIDS IS \_\_\_\_\_ % MOISTURE IS \_\_\_\_\_  
 ARE FREE LIQUIDS PRESENT? ☒ YES \_\_\_\_\_ NO IF "YES", VOL % 2-5  
 FLASH POINT (Indicate degrees F or C): \_\_\_\_\_

CHEMICAL ANALYSIS (WEIGHT PERCENT UNLESS INDICATED OTHERWISE):

**INORGANICS:**

NICKEL _____	CALCIUM _____	SULFATE _____
COBALT _____	SODIUM _____	FLUORIDE <input checked="" type="checkbox"/>
CHROMIUM _____	PLATINUM _____	CHLORIDE _____
COPPER _____	PALLADIUM _____	OTHERS: <u>Lead</u> <input checked="" type="checkbox"/>
ZINC _____	GOLD _____	<u>Tin</u> <input checked="" type="checkbox"/>
IRON _____	SILVER _____	_____
VANADIUM _____	AMMONIA _____	_____
CADMIUM _____	CYANIDE _____	_____
SILICA (SAND) _____	DIATOMACEOUS EARTH _____	_____
PH (IF APPROPRIATE) <u>&lt;1</u>	SP. GRAVITY (IF APPROP.) _____	_____

**ORGANICS:**

 DOES MATERIAL CONTAIN: None that we know of.

_____ CYANIDES	_____ SULFIDES	_____ PHENOLICS
_____ PCB'S	_____ ASBESTOS	_____ KNOWN CARCINOGENS
_____ EXPLOSIVES	_____ POISONS	_____ SUSPECT CARCINOGENS
_____ PYROPHORICS	_____ PESTICIDES/HERBICIDES	_____ CHLORINATED HYDROCARBONS

DESCRIBE IN DETAIL THE PROCESS GENERATING THIS MATERIAL:

Plating bath is filtered and these solids are collected on filter paper.

IS THIS MATERIAL CURRENTLY BEING MANAGED BY:

_____ RECYCLING? HOW, AND BY WHOM? _____
_____ DISPOSAL IN A SANITARY OR MUNICIPAL SOLID WASTE LANDFILL?
_____ DISPOSAL IN A HAZARDOUS WASTE LANDFILL?
_____ STORAGE IN _____ PILES, _____ IMPOUNDMENT, _____ DRUMS, _____ OTHER _____?
_____ CHEMICAL FIXATION OR STABILIZATION FOLLOWED BY DISPOSAL?

**REGULATORY CLASSIFICATION OF MATERIAL**U.S. EPA HAZARDOUS WASTE? ☐ YES ☒ NO ☒ PRESENTLY EXEMPTIF "YES" ☐ LISTED WASTE, OR☐ CHARACTERISTIC WASTE?☐ EP TOXIC?☐ REACTIVE?☐ CORROSIVE?☐ IGNITABLE?WHAT IS THE HAZARDOUS WASTE CODE? D002 / D008 (if dispIF "PRESENTLY EXEMPT," PLEASE EXPLAIN: This is a by product beingrecycled and therefore not a solid waste under RCRAIS MATERIAL SUBJECT TO CLASSIFICATION UNDER STATE CODES? ☐ YES ☒ NO

IF "YES" GIVE STATE AND CODE: \_\_\_\_\_

ACCORDING TO U.S. EPA RCRA REGULATIONS, IS THIS MATERIAL A: (Check only one)

☐ SLUDGE☒ BY-PRODUCT☐ SPENT MATERIAL☐ UNKNOWN☐ SCRAP METAL☐ COMMERCIAL CHEMICAL PRODUCT**SHIPPING INFORMATION:**

DOT INFORMATION:

HAZARDOUS MATERIAL? ☒ YES ☐ NOPROPER SHIPPING NAME: CorrosiveHAZARD CLASS: 5.1

REPORTABLE QUANTITY: \_\_\_\_\_

U.N./NAE 1760

PACKING GROUP: \_\_\_\_\_

PLACARD REQUIREMENT: YesIS THERE A SHIPPING LABEL FOR THIS WASTE? ☐ (IF YES, ATTACH)HAZARDOUS WASTE MANIFEST REQUIRED? ☐ FED REGS ☐ STATE REGSVOLUME: AMOUNT 120-150 lbs PER DAY / WEEK / MONTH / QUARTER YEAR ONE-TIME (Circle One)PACKAGING: DRUMS BOXES NYLON BAGS BULK (Circle One)IS THERE AN MSDS FOR THIS MATERIAL? ☐ (IF YES, ATTACH)**COMMENTS:** (PLEASE PROVIDE ANY OTHER PERTINENT INFORMATION AND LIST ANY ATTACHMENTS):

## \*\*\*\*\* CERTIFICATION \*\*\*\*\*

I CERTIFY THAT THE IDENTIFICATION OF THE MATERIAL OFFERED FOR RECYCLING AND DESCRIBED IN THIS PROFILE FORM AND ANY SUPPLEMENTS ATTACHED HERETO IS COMPLETE, TRUE AND ACCURATE. MY CERTIFICATION IS BASED ON MY PERSONAL KNOWLEDGE AND/OR INFORMATION SUBMITTED BY OTHERS RESPONSIBLE FOR OBTAINING THE INFORMATION ABOUT WHICH I HAVE MADE DILIGENT INQUIRIES TO SATISFY ME THAT IT IS COMPLETE.

SIGNATURE

DATE

PRINT NAME AND TITLE